



SFA Portal

Application Architecture and Detailed Design

Version 1.0

June 12, 2000

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1.0 Overview

This document, *Application Architecture and Detailed Design*, is part of the overall analysis of technical requirements for the SFA Portal Version 1.0. There are three other sets of documents that make up the technical analysis of requirements:

- Business, Functional, and Technical Requirements (Attachments A and B)
- Interface Design (Attachments C and D)
- Test Plan (Attachment E)

Collectively, these documents comprise the development team's deliverable to SFA as outlined in the Task Order governing development of the SFA Portal V1.0

The analysis of technical requirements is a living document (or set of documents) that will continue to evolve and be refined through the course of building the SFA Portal V1.0. The requirements document (Attachment A) has served as a vehicle for refining existing requirements and identifying new requirements to more accurately reflect customer needs, launching the user interface and storyboard design work, and defining the test plan. User design sessions will generate further refinement of existing requirements and identification of new requirements, some of which it may be feasible to implement in V1.0. Similarly, the user interface design and storyboard are living documents and will continue to evolve right up through both the NASFAA conference and the final few weeks before production system deployment.

The *Application Architecture and Detailed Design* also is a living document. It serves several core purposes in the development of the portal:

- Identify how the component technologies will work together to deliver the functionality specified in the requirements
- Serve as a roadmap to guide development so that the Portal code is architecturally sound and robust, and can be developed with maximum efficiency and speed
- Provide the framework for detailed documentation so that the Portal application can be easily maintained, enhanced, built upon, and integrated with other applications

As delivered today, the *Application Architecture and Detailed Design* document takes the currently available knowledge about required functionality and component technologies as far as it can go to define the architecture and detailed design of the SFA Portal application. It will continue to evolve with further refinements of business, functional and technical requirements and user interface design. It will also continue to change as we learn more about the capabilities of the underlying COTS applications and their ability to work together; both through provision of vendor technical support, training, and documentation and through the development process itself.

2.0 Architecture

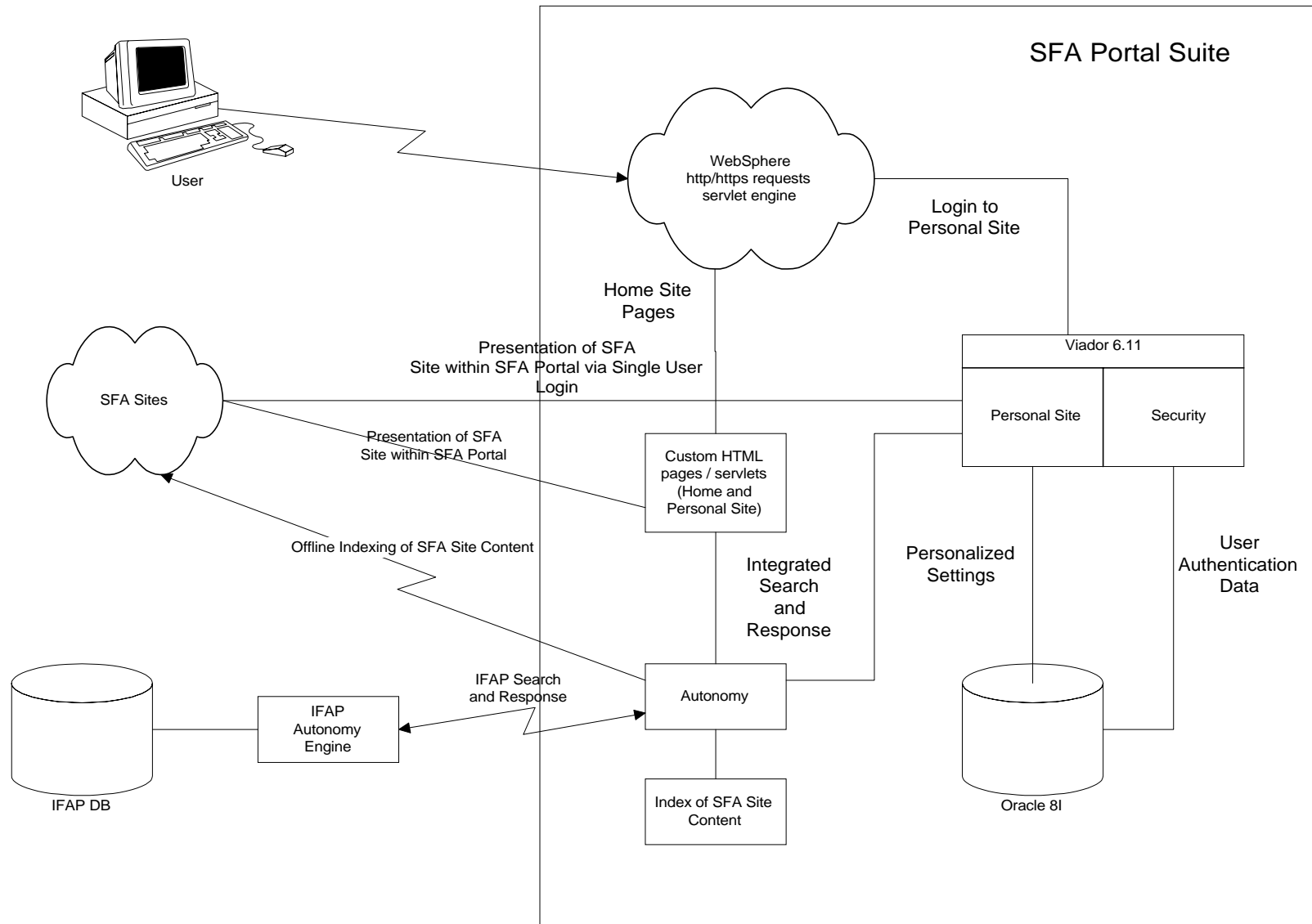
The SFA Portal system is composed a series of COTS products integrated by custom-developed code to form a complete system that meets the functional requirements as specified in the *SFA Portal Requirement Document* (attachment A). The major components of the SFA Portal are:

<i>Product</i>	<i>Function</i>
WebSphere	Web Server for client HTTP requests. Also provides a Servlet engine for server-side processing
Autonomy	Search engine providing integrated search and spidering for the Portal
Oracle 8	Relational database used to provide persistent data storage for user preferences and dynamic Portal contents
Viador	Commercial Portal interface used to provide security and authentication of users

The basic architecture of the SFA Portal system is shown in **Figure 1**.

- All client interactions are processed through **WebSphere**. This includes ‘click-through’ and ‘link-and-launch’ functions in support of SFA sites, as well as external sites accessible via bookmarks in the Personal Site area.
- **WebSphere** retrieves Portal content as requested by the user. **WebSphere** is also responsible for delivering the login interface from **Viador** to the client.
- **Viador** stores client authentication information for login and client preferences for the Personal Site in **Oracle 8**.
- The Home Site and Personal Site pages access **Autonomy** to provide integrated search functionality.
- **Autonomy** spiders the SFA site content and stores it in its own internal database. **Autonomy** also accesses the external Autonomy engine provided by IFAP.
- **Viador** will provide access and presentation, through **WebSphere**, of external content such as news feeds and stock quotes, as these features are defined.

Figure 1: SFA Portal Architecture



3.0 High Level Design

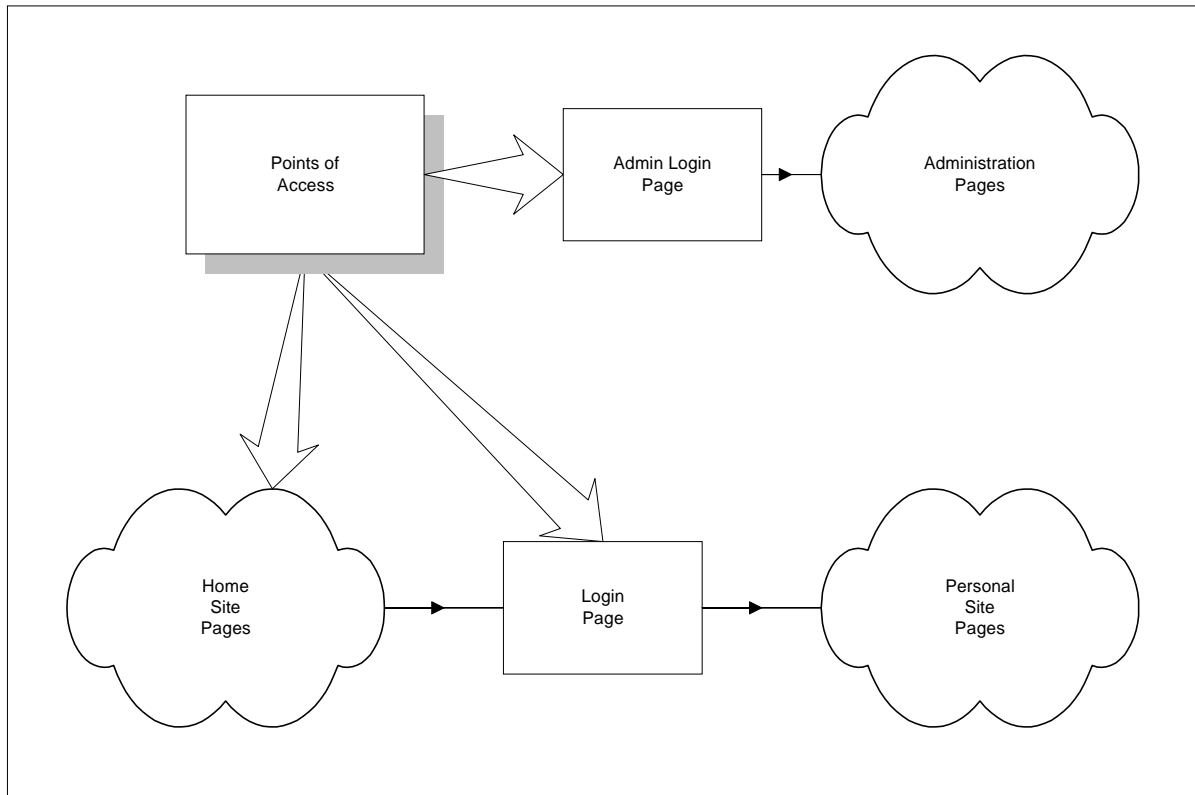
3.1 High Level Site Map

The SFA Portal consists of three groups of web pages:

- The Home Site, containing open access content with no customization;
- The Personal Site, providing customized content on a per-user basis;
- The Administration Site, allowing site administrators to create and maintain calendar and headline content

The high level layout of the SFA Portal pages is shown below in **Figure 2**. Clients can freely access the Home Site pages, but cannot access the Personal Site pages without going through the Login Page. This provides the necessary level of authentication required to do personalization, and provides the security framework allowing the implementation of single user login. Likewise, administrators cannot access the Administration pages without authenticating through the Admin Login page.

Figure 2: High Level Site Map

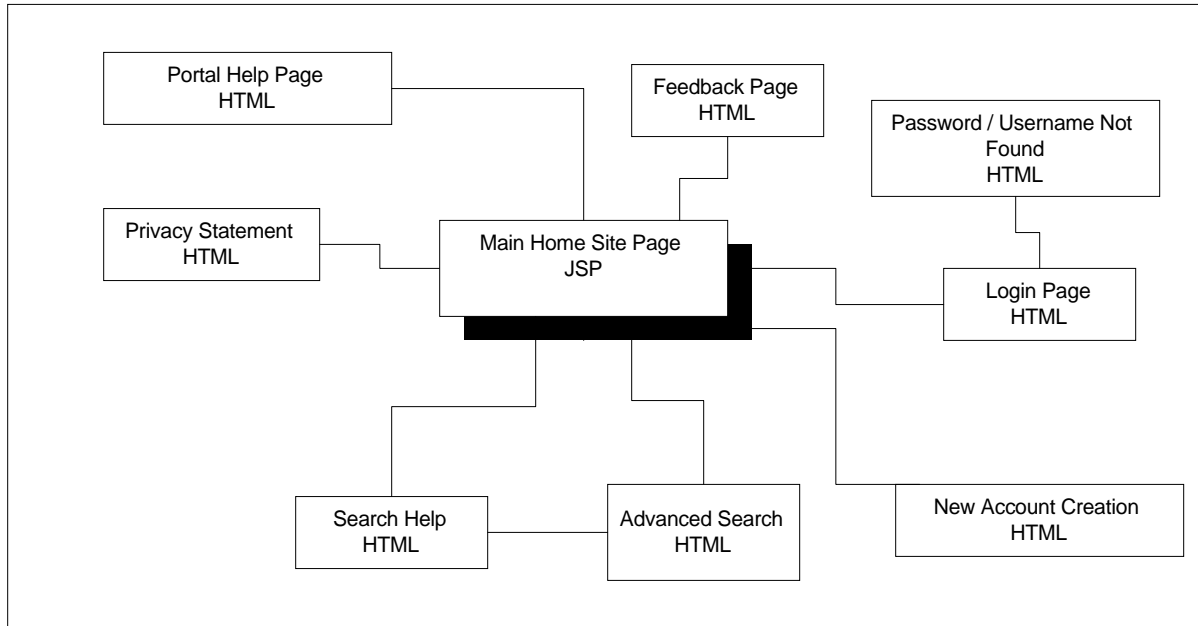


Pages within the Home Site and Personal Site areas will be displayed in the current browser window, while sites outside of the SFA Portal accessed through links in the Portal will be floated in a new window.

3.2 Home Site Pages Map

The Home Site pages are the set of open access pages available to all clients without the need for authentication. No customization of content based on the client identification is available on the Home Site. The Home Site pages are connected as shown in **Figure 3**.

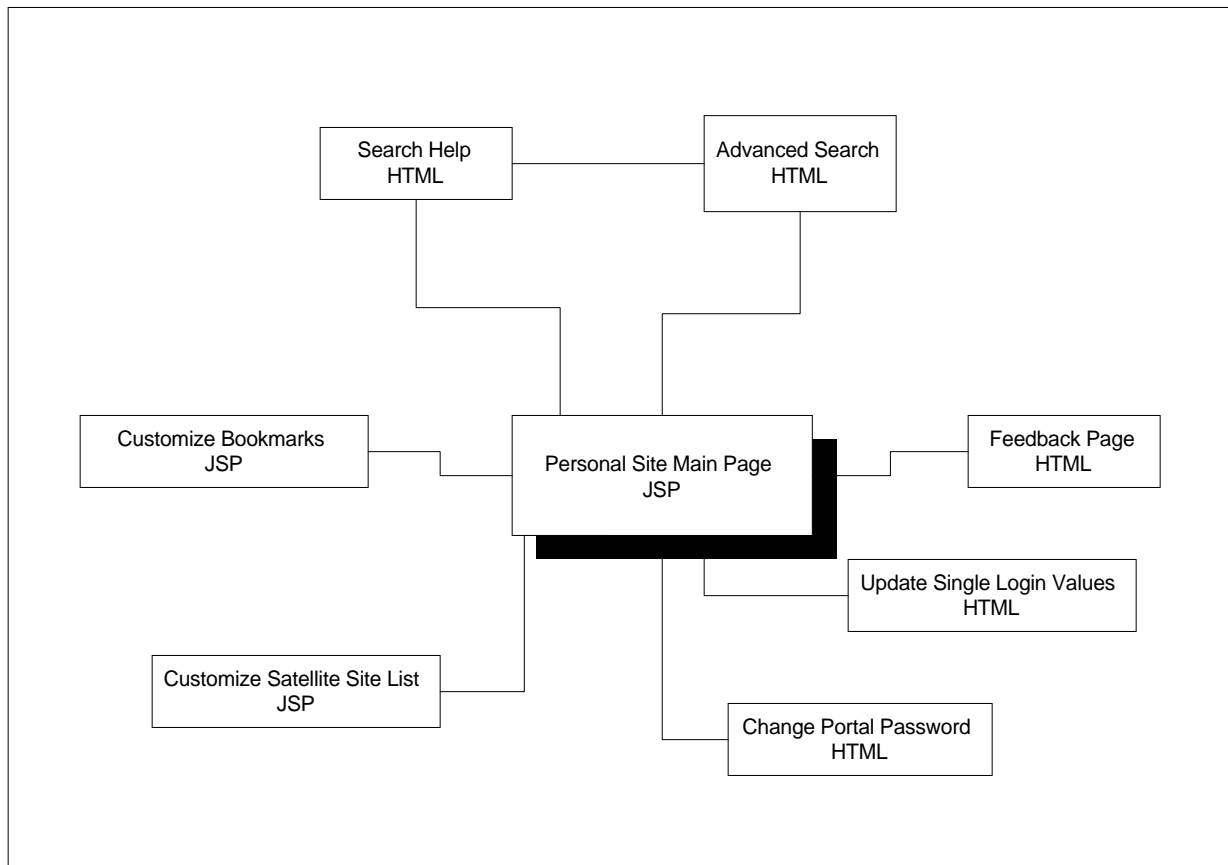
Figure 3: Home Site Map



3.3 Personal Site Pages Map

The Personal Site pages are the set of pages that are only accessible after the client has been authenticated. The Personal Site provides custom content based on preferences that the client can configure through the Portal. The Personal Site pages are connected as shown in **Figure 4**.

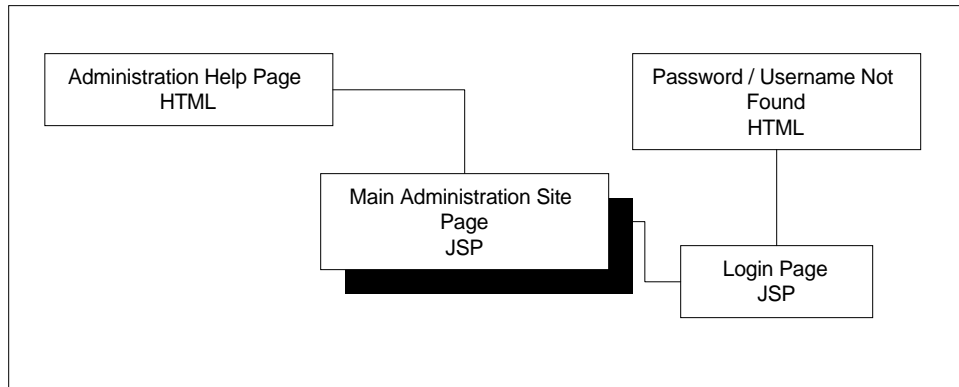
Figure 4: Personal Site Map



3.4 Administration Site Pages Map

The Administration Site pages provide a web-based interface to perform any administrative functions that must be performed internally. Currently, the only functions defined are for content management (add/mod/delete) of Headlines and the Calendar. Should Single-Logon be implemented, administration of user passwords and ids would likely take place through the Administration Site pages. The URL to access these pages will not be publicly available and the pages will require authentication before an administrator can make any changes to the content of the Headlines or Calendar data.

Figure 5: Administration Site Map



4.0 Detailed Design

The detailed design is divided into three sections corresponding to the three sections specified in the high level design.

4.1 Home Site Detailed Design

The Home Site consists of six major functional areas:

- Static HTML pages
- SFA Links
- Calendar of Events
- Headlines
- Search Functions
- Personal Site Account Creation

4.1.1 Static HTML Pages

Static HTML pages are those web pages which contain no dynamic content and which maintain no server side connection. All static HTML pages are delivered to the client via standard HTTP (Hypertext Transfer Protocol) techniques utilizing WebSphere as the delivery mechanism. The static HTML pages contained under the Home Site are as follows:

- Portal Help page
- Privacy Statement page
- Feedback page
- Advanced Search page
- Search Help page
- New Account Creation page

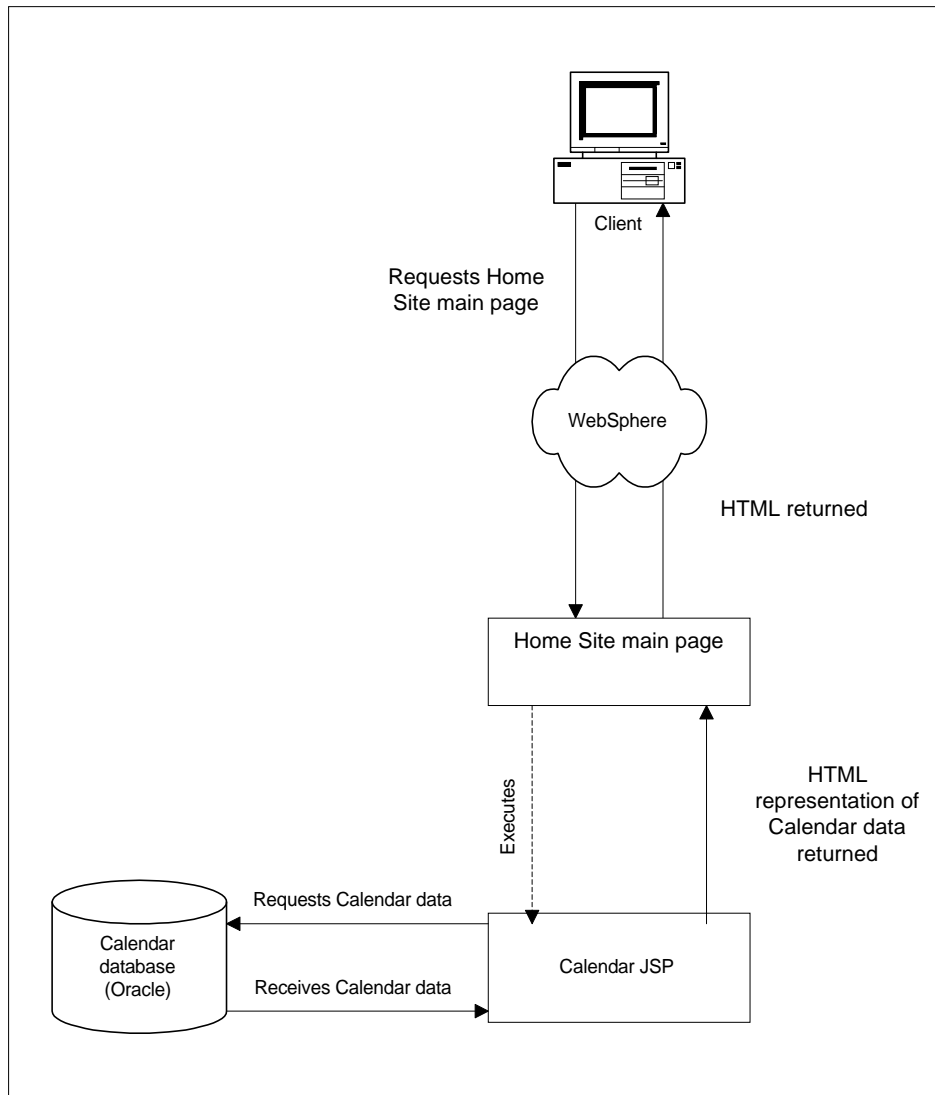
4.1.2 SFA Links

The links to the SFA Link Sites will be static HTML links within the Home Site JSP. Clicking on a SFA Link will float the target site in a new window.

4.1.3 Calendar of Events

The content provided by the Calendar of Events will be generated by the Calendar JSP (Java Server Page) and directly incorporated into the Home Site main page. The generation of this content is done as shown in **Figure 6**.

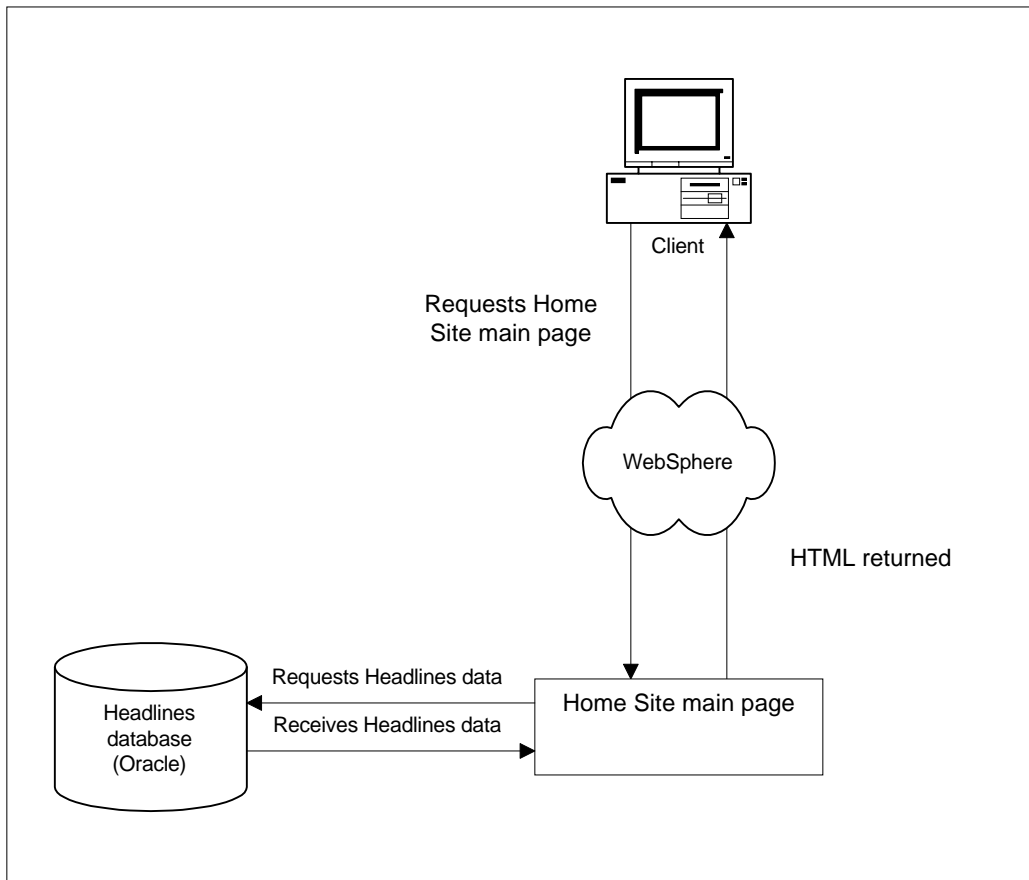
Figure 6: Calendar Retrieval Data Flow



4.1.4 Headlines

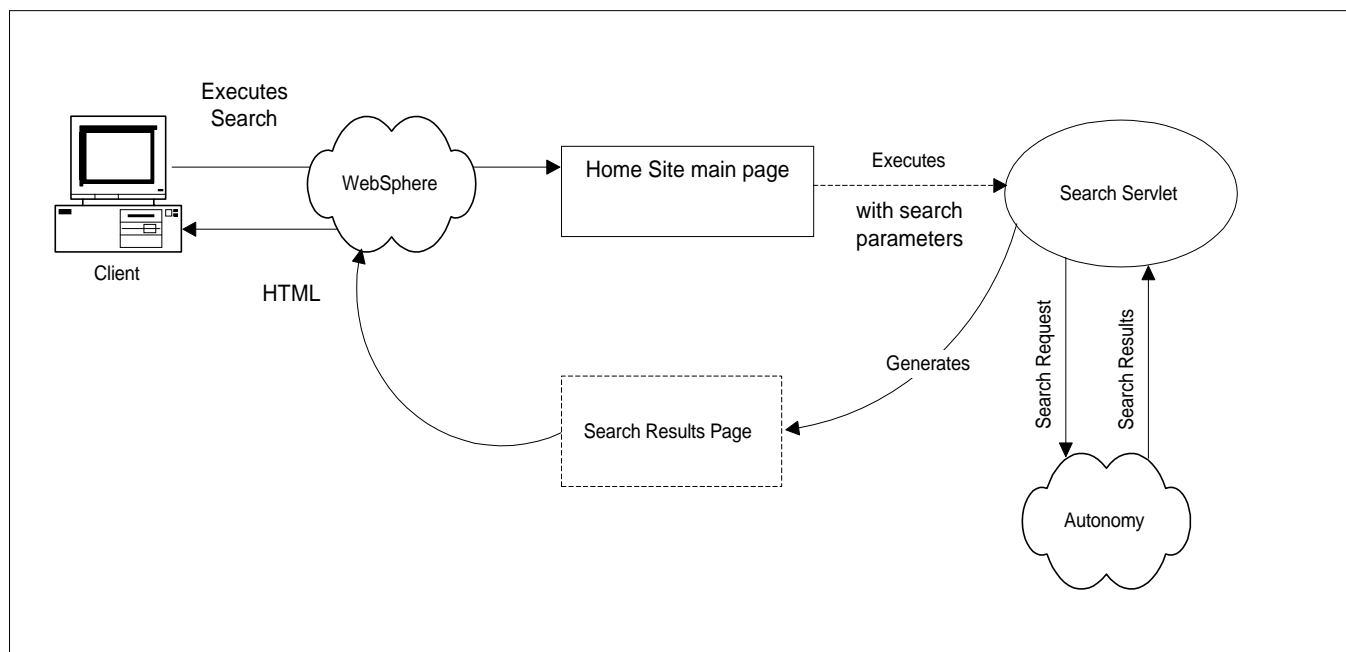
The Headlines content will be generated directly by the Home Site main page JSP (Java Server Page). The generation of this content is done as shown in **Figure 7**.

Figure 7: Headline Retrieval Data Flow



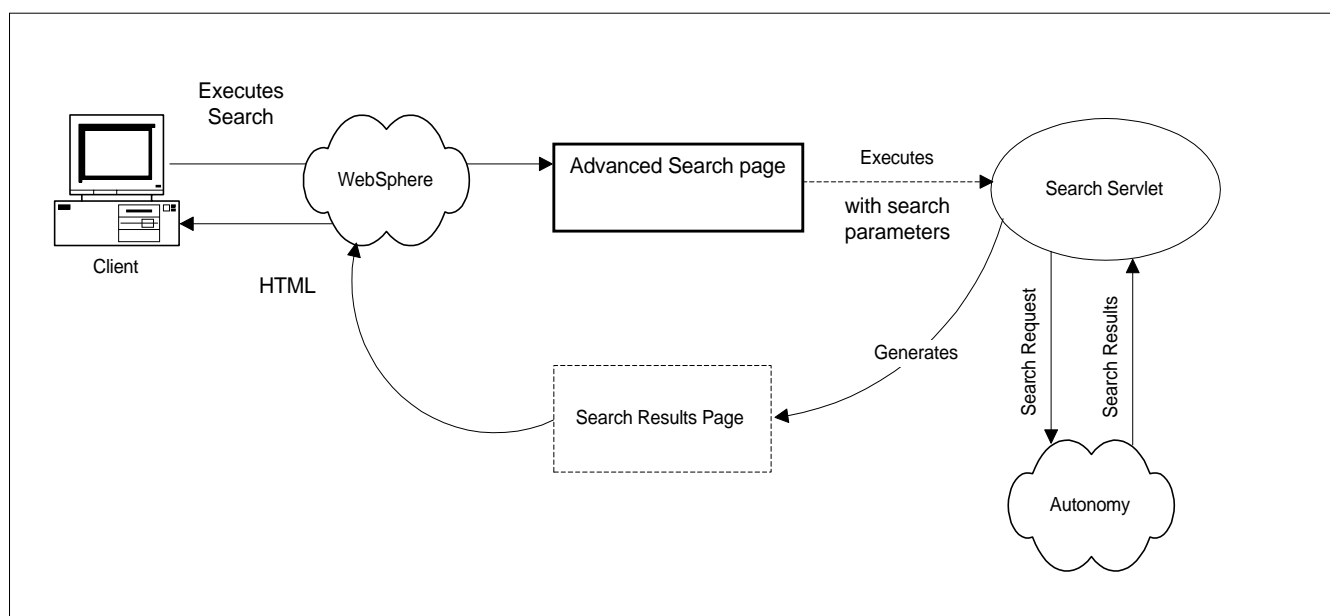
4.1.5 Basic Search

A basic search occurs when a user executes a search directly from the Home Site main page. The search results are generated by the Autonomy search engine and then displayed to the user. The details of the transaction are present in **Figure 8**.

Figure 8: Basic Search Data Flow

4.1.6 Advanced Search

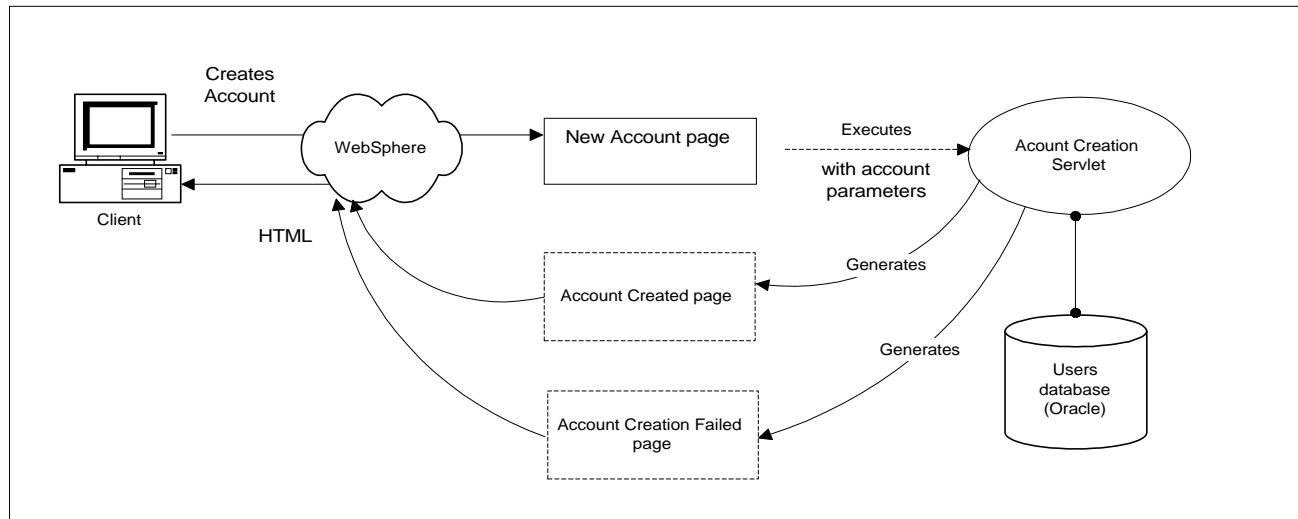
An advanced search can be initiated by the user from the Advanced Search page. This page presents the user with additional search options beyond the ones available from the basic search found on the Home Site main page. These options include limiting the search to a specified set of SFA sites, as well as breaking the query down into groupings such as 'must include' or 'must not include'. See **Figure 9** for details.

Figure 9: Advanced Search Data Flow

4.1.7 New Account Creation

This details the process by which a user creates a new account for the SFA Portal. The account creation page will prompt them for some user information and a password. At this point, the user will press the submit button and the SFA Portal will attempt to create the account. The flow of data through the system is as follows:

Figure 10: New Account Creation Data Flow



4.2 Personal Site Detailed Design

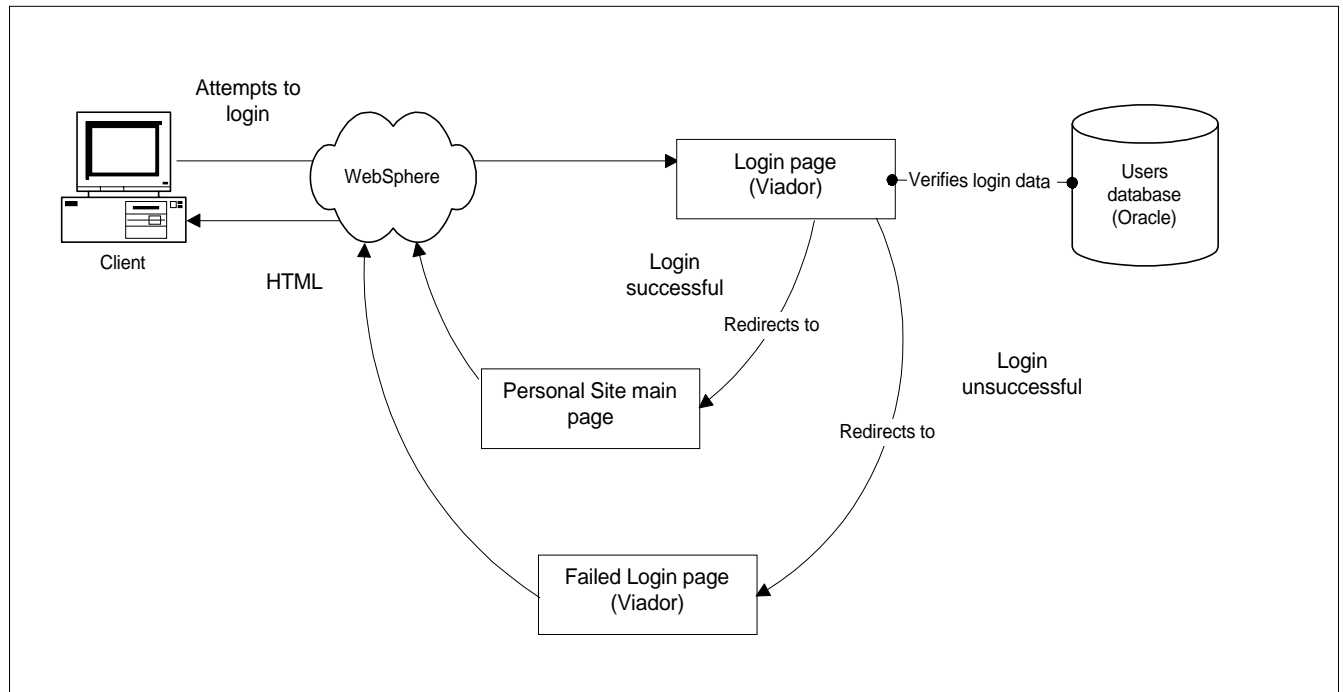
For purposes of security and authentication, the Personal site pages can only be reached via the Login page. However, it is not necessary to access the Login page from the Home Site. The login page can be directly accessed from anywhere on the Web. The Personal Site consists of the following functional areas:

- Login
- Static HTML pages
- Calendar of Events
- Headlines
- Calendar of Events Customization Page
- Headlines Customization Page
- SFA Links
- SFA Links Customization Page
- Personal Bookmarks
- Personal Bookmarks Customization Page
- Search Functions
- Modify User Profile
- Unified Login Functions

4.2.1 Login Page

The login page is provided as a means of identifying users for the purpose of providing customized content and as a way of providing secure access to unified login functions. The login page can either be accessed from the Home Site main page or it can be accessed directly from anywhere on the Web. The login process occurs in the following manner:

Figure 11: Login to Personal Site



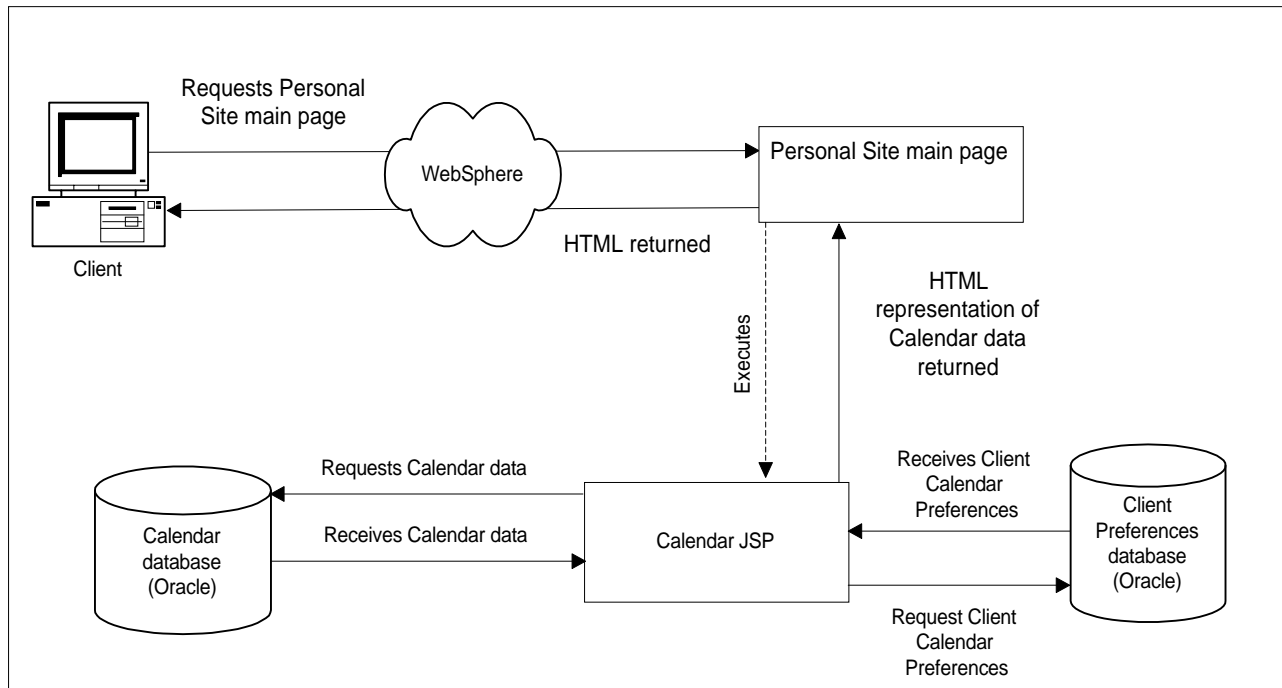
4.2.2 Static HTML Pages

The static HTML pages found under the personal site are handled in the same manner as those found under the Home Site pages. The static HTML pages contained under the Personal Site are as follows:

- Portal Help page
- Privacy Statement page
- Feedback page
- Advanced Search page
- Search Help page

4.2.3 Calendar of Events

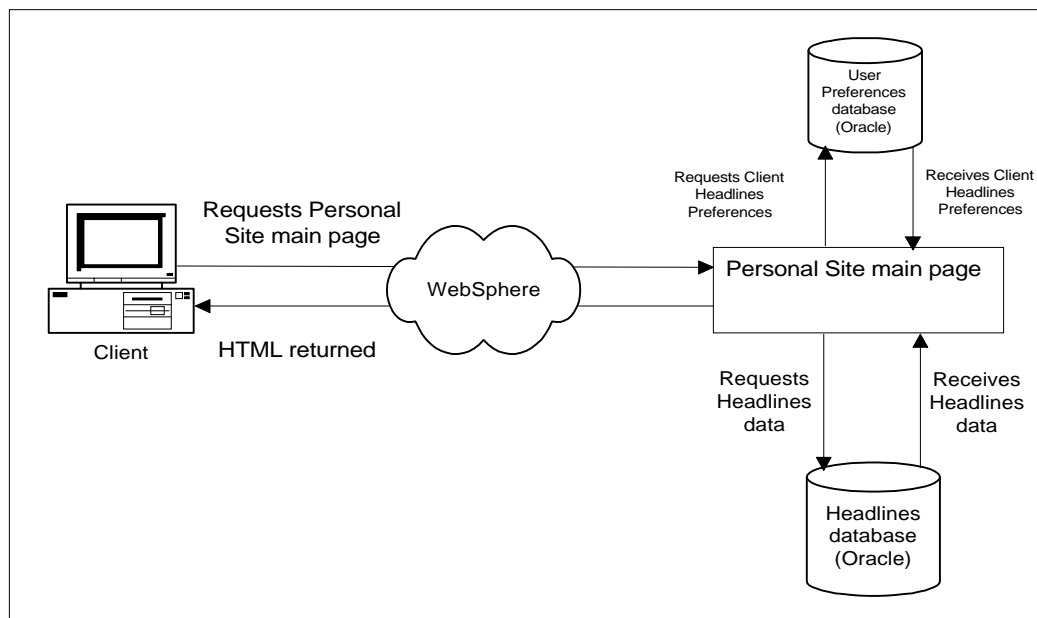
The Calendar of Events that is displayed on the Personal Page functions in nearly the same manner as the Calendar of Events found on the Home Site, with the exception that the information displayed by this calendar can be filtered to only show events in certain categories. The process by which this filtering is set up is described in detail in section 4.2.5. **Figure 12** details the design for the Calendar of Events found on the Personal Site main page.

Figure 12: Personal Site Calendar of Events Data Flow

4.2.4 Headlines

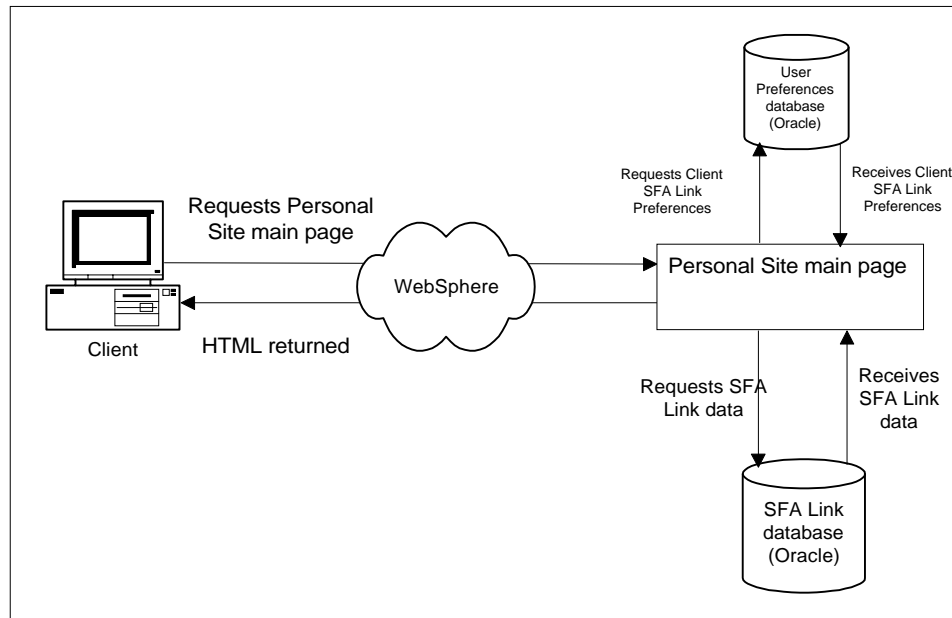
The Headlines that are displayed on the Personal Page functions in nearly the same manner as the Headlines found on the Home Site, with the exception that the information displayed by these headlines can be filtered to only show events in certain categories. The process by which this filtering is set up is described in detail in section 4.2.6.

Figure 13 details the design for the Headlines found of the Personal Site main page.

Figure 13: Personal Site Headline Data Flow

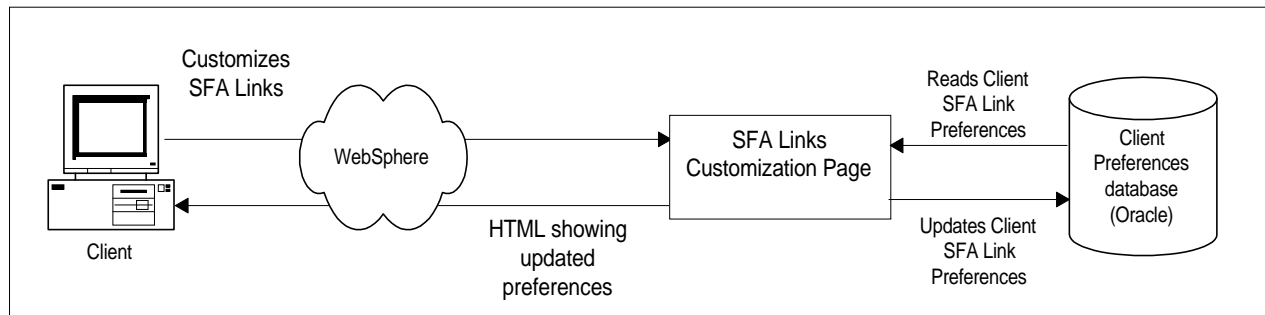
4.2.5 SFA Links

Figure 14: SFA Link Display Data Flow



4.2.6 SFA Links Customization Page

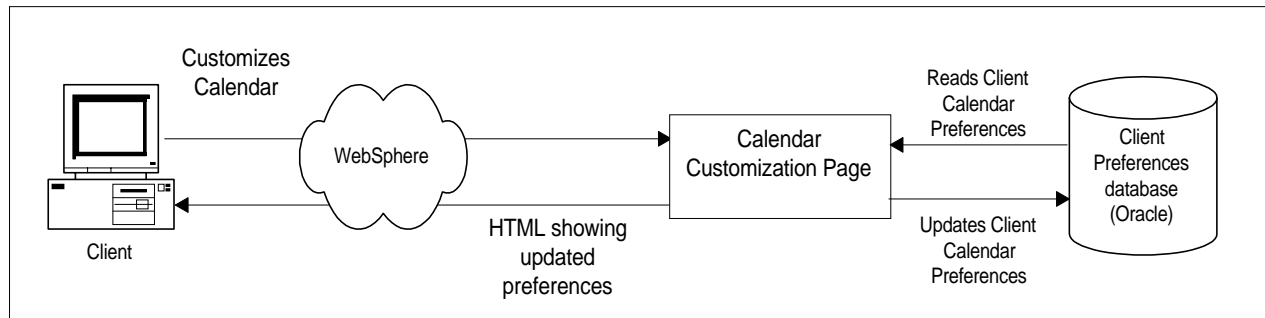
Figure 15: SFA Links Customization



4.2.7 Calendar of Events Customization Page

This page allows clients to define what categories of information they are interested in seeing within the Calendar of Events on their Personal Site main page.

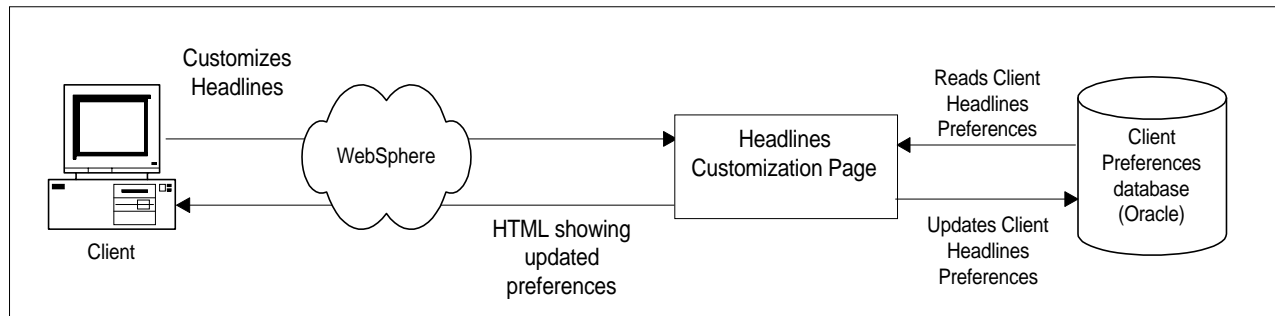
Figure 16: Calendar of Events Customization



4.2.8 Headlines Customization Page

This page allows clients to define what categories of information they are interested in seeing within the Headlines on their Personal Site main page.

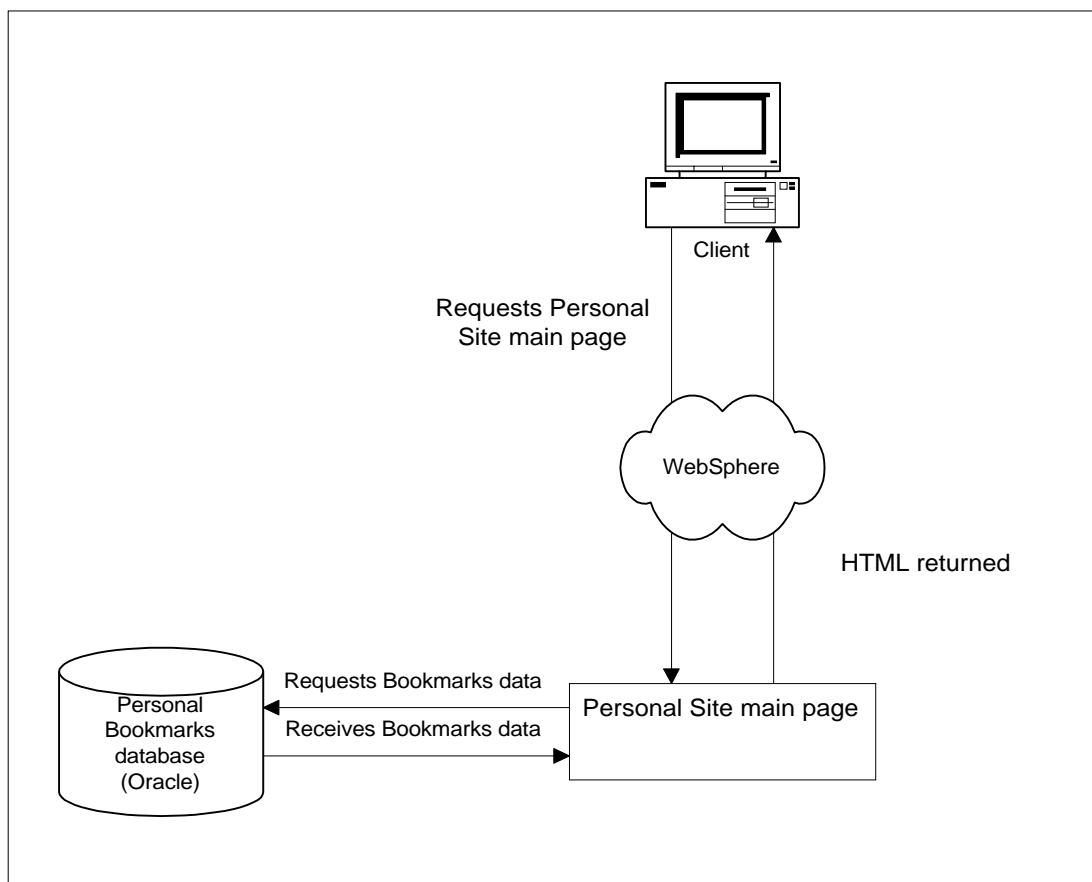
Figure 17: Headlines Customization



4.2.9 Personal Bookmarks

The Personal Site main page displays a client-defined subset of Personal Bookmarks that have been defined by the client. The mechanism by which these bookmarks are displayed is detailed in **Figure 16**.

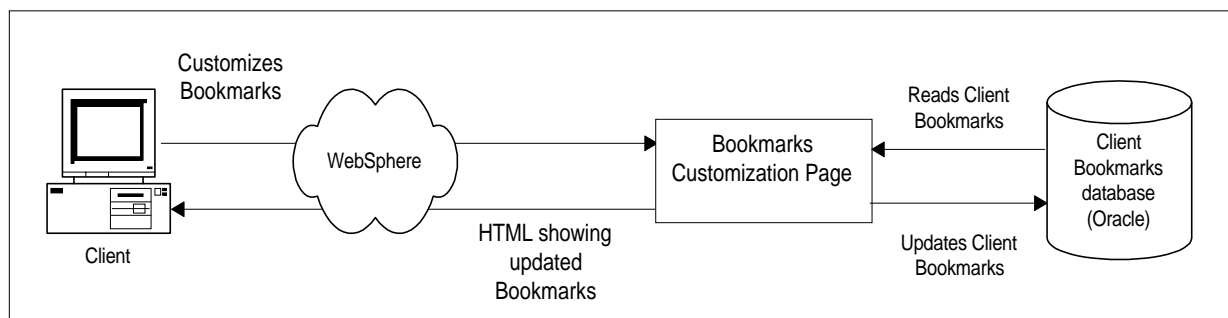
Figure 18: Personal Bookmarks Data Flow



4.2.10 Personal Bookmarks Customization Page

This page allows users to add and remove personal Bookmarks as well as define the subset of Personal Bookmarks that are to be displayed on their Personal Site main page. See **Figure 17** for details.

Figure 19: Personal Bookmarks Customization



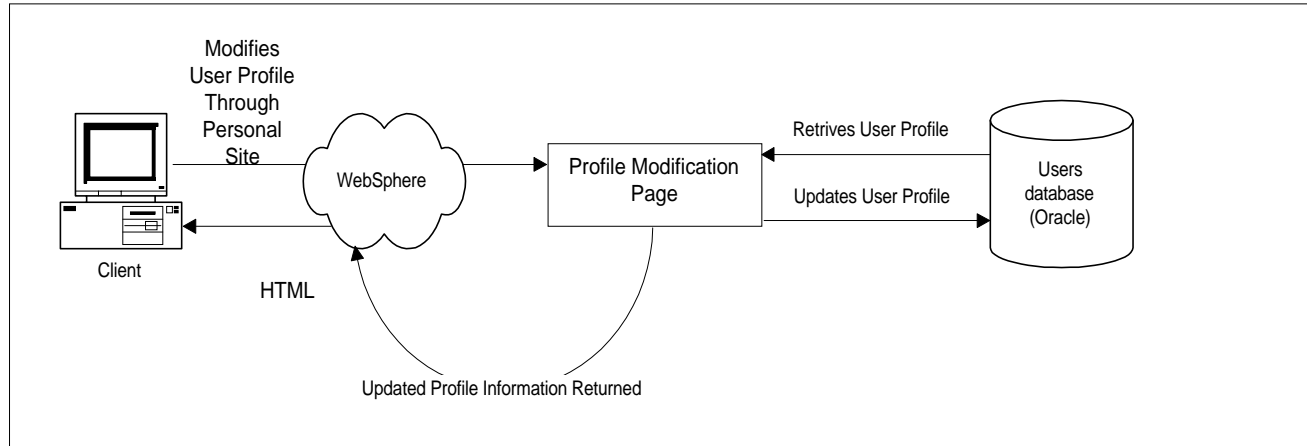
4.2.11 Search Functions

The search functions available from the Personal Site are identical in design and function to those available from the Home Site. See sections 4.1.4 and 4.1.5 for design details.

4.2.12 Modify User Profile

The Personal Site provides a page allowing the user to change their SFA Portal password and other profile information. The flow of the Modify Profile functionality is show below:

Figure 20: Modify User Profile

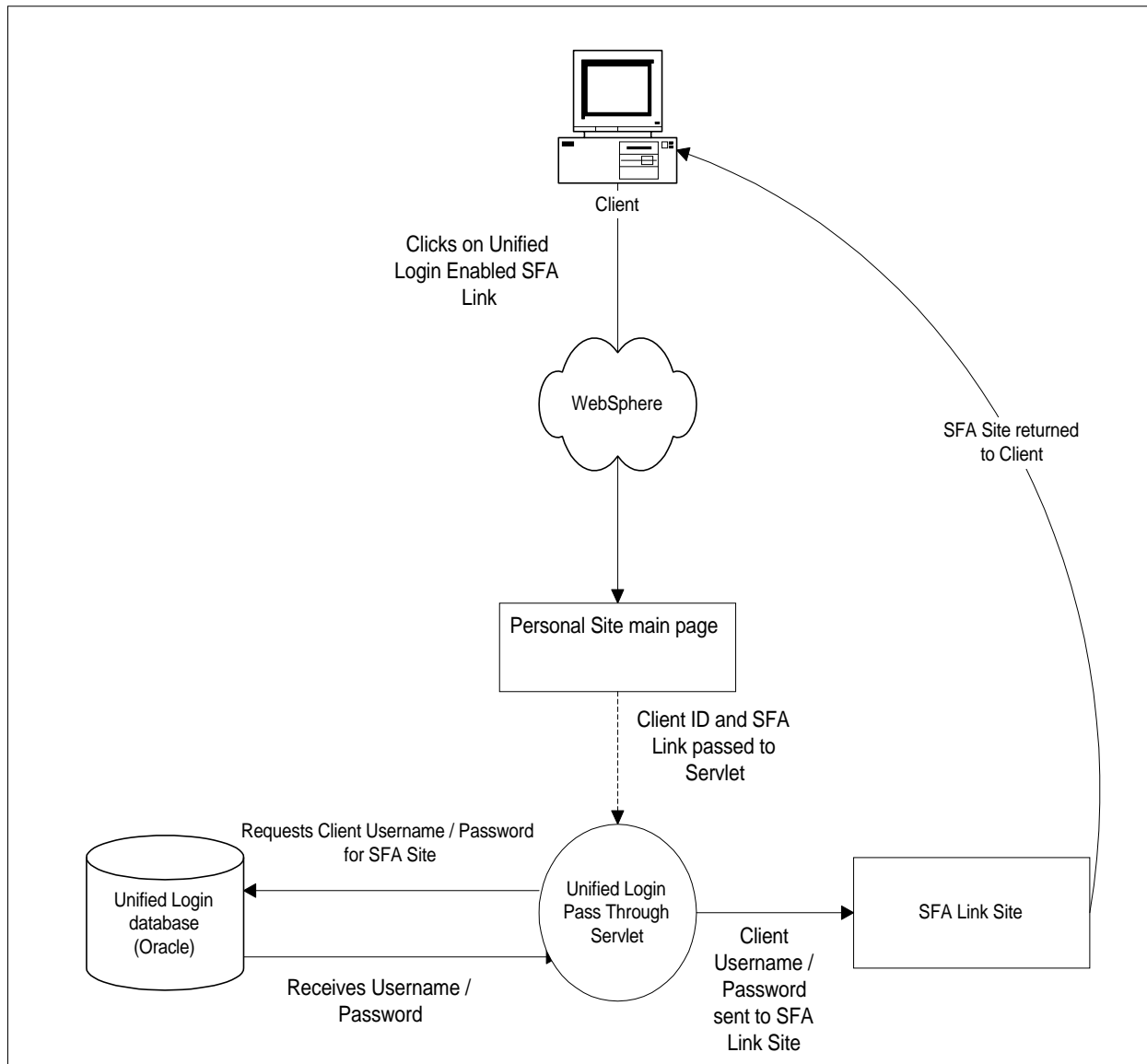


4.2.13 Unified Login

Unified Login is composed of two distinct functionalities, the Unified Login Pass Through and the Unified Login Configuration. We will design and implement a unified login solution based on the best knowledge available about the target SFA sites, utilizing the HTTP post/get methods. We will develop a test plan based on the assumption that testing access to these sites will be provided, either through a temp/guest login to the production sites, or to an internet-accessible test version of the sites. All unit, system and integration testing of single logon will require this information. If such information is unavailable or incomplete, we will either work with SFA to identify internal personnel who have access to these sites who could act as test users, or we will simply turn off this functionality for version 1.

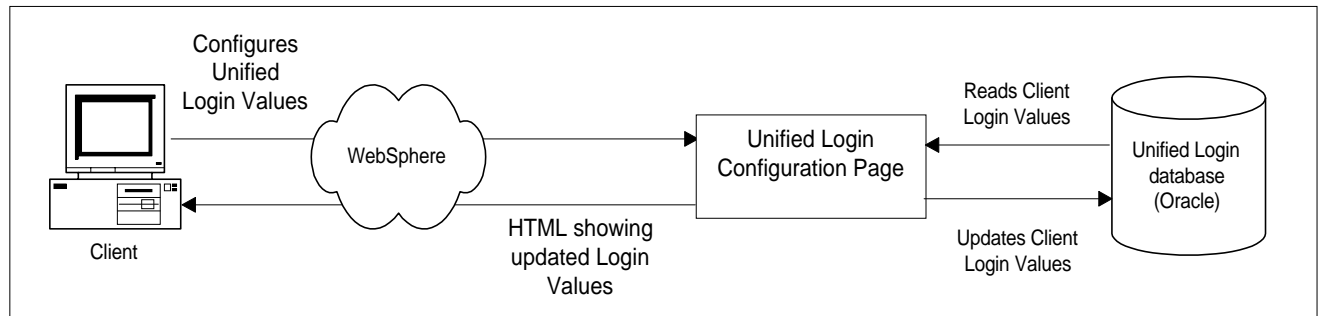
4.2.13.1 Unified Login Pass Through

Figure 21: Unified Login Pass Through



4.2.13.2 Unified Login Configuration

Figure 22: Unified Login Configuration

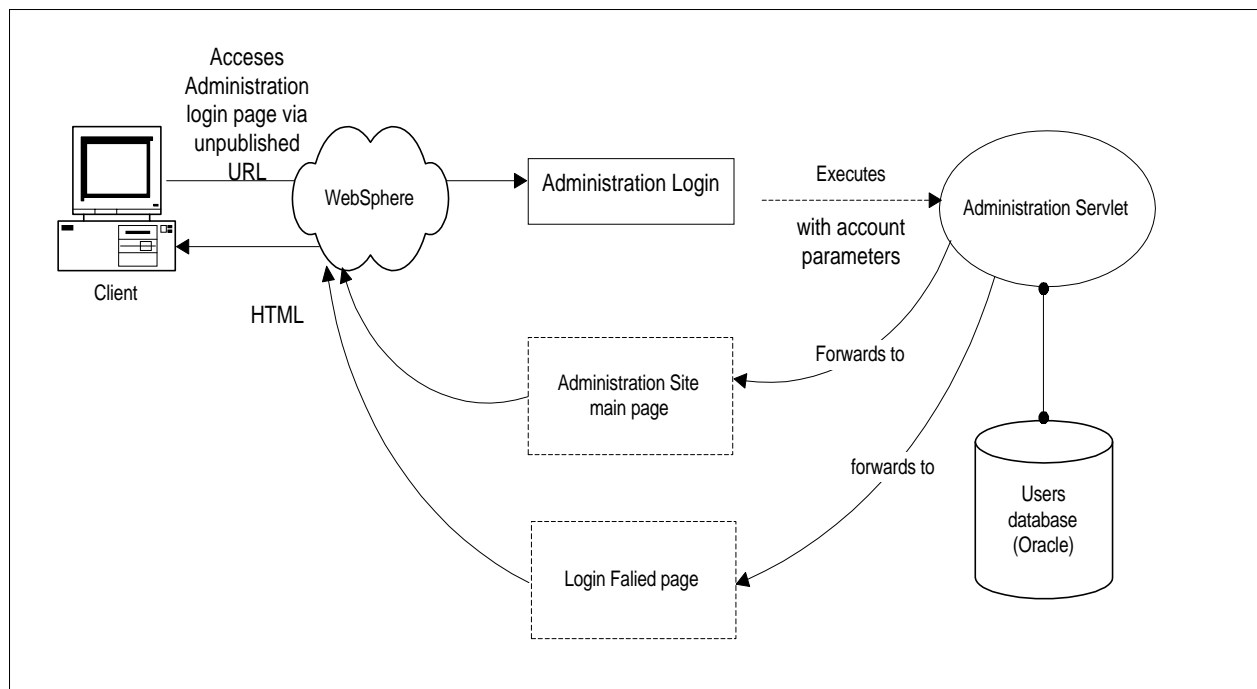


4.3 Administration Site

The pages in the Administration Site are provided as a means for authorized personnel to modify and add Calendar of Events and Headlines information to the SFA Portal. The Administration Site pages will not be accessible by any links on any of the SFA Portal pages. The URL for accessing the Administration Site will be given to authorized users only, thereby allowing them direct access to the page while discouraging unauthorized users from attempting to gain access.

4.3.1 Administration Login

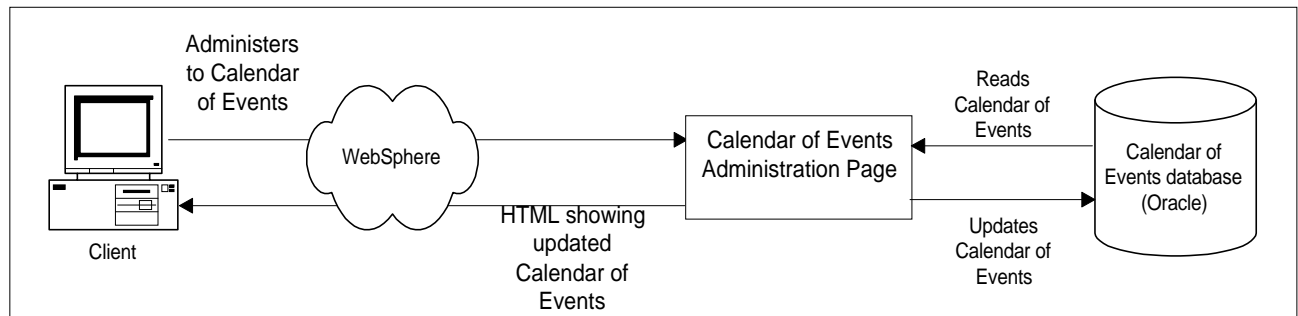
Figure 23: Administration Site Login



4.3.2 Calendar Administration

The Calendar Administration page of the Administration Site provides users with the ability the add, delete, or modify Calendar of Events information. The Calendar Administration database will be available for external access by authorized users.

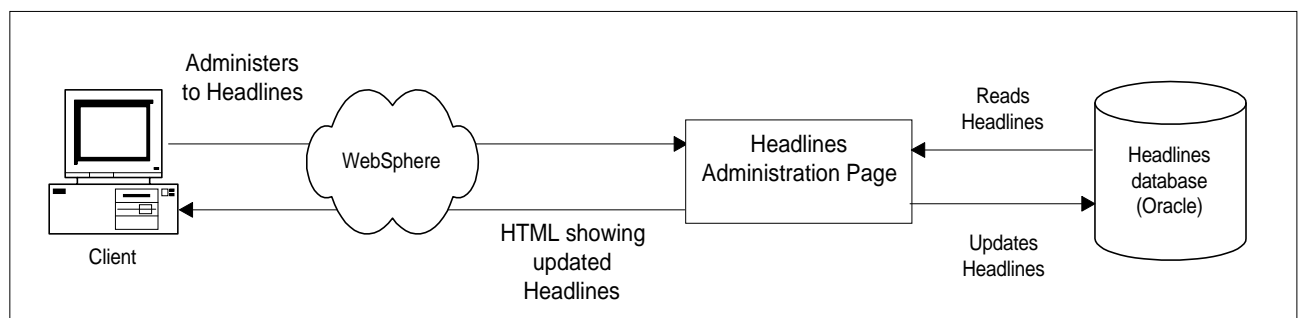
Figure 24: Calendar of Events Administration



4.3.3 Headlines Administration

The Headlines Administration page of the Administration Site provides users with the ability the add, delete, or modify Headlines information. . The Headlines Administration database will be available for external access by authorized users.

Figure 25: Headlines Administration



5.0 Requirements Mapping

This section contains the mapping of the system requirements to the design areas. The requirements are taken from the *SFA Portal Requirements Document Version 1.1*, dated 06 June 2000.

Rqmt #	Requirement	Fulfilled By
	3.0 System Requirements	
	3.1 SFA Sites	
3.1-1	<p>The SFA Portal shall provide access to the following set of SFA web sites:</p> <ul style="list-style-type: none"> • The GAPS site (http://gapsweb.ed.gov/) • The Pell Grants site (http://www.pellgrantsonline.ed.gov/) • The NSLDS site (http://nslsdfap.ed.gov/secure/logon.asp) • The Bulk Publication Ordering System site (http://webprod.aspensys.com/education/epos/newbpos/default.asp) • The Application to Participate site (http://www.eligcert.ed.gov/) • The IFAP site (http://www.ifap.ed.gov/) • The SFA Download site (http://www.sfadownload.ed.gov/) • The SFA Tech Support site (http://ed.gov/offices/OSFAP/sfatech/index.html) • The SFA Coach site (http://http.ifap.ed.gov/sfacoach/index.html) • The QAP site (http://www.ed.gov/offices/OSFAP/QAP/) • The FAFSA site (http://www.fafsa.ed.gov/) • The SFA Ombudsman site (http://www.sfahelp.ed.gov/) • The Loan Consolidation site (http://loanconsolidation.ed.gov/) • The DL Origination site (https://lo-online.ed.gov/lo_online/index.shtml) • The DL Servicer site (http://dlservicer.ed.gov/) • The PEPS site (http://www.ed.gov/offices/OSFAP/PEPS) • The CAMS site • The SFA University site (http://www.ed.gov/offices/OPE/announce/trng) 	<p>The Home Site access is covered in Section 4.1.2.</p> <p>The Personal Site access is covered in Section 4.2.13.1</p>
	3.2 Home Site	
3.2-1	The SFA Portal shall provide a Home Site	Section 3.0
3.2-2	The Home Site shall be an Open Site	Section 3.1 Section 3.2

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Rqmt #	Requirement	Fulfilled By
3.2-3	The Home Site shall provide information on Personal Sites	Section 3.2 Section 4.1.1
3.2-4	The Home Site shall provide information on navigating through the portal	Section 3.2 Section 4.1.1
3.2-5	The Home Site shall provide information on obtaining Personal Site access	Section 3.2 Section 4.1.1
3.2-6	The main page of the Home Site shall be directly accessible	Section 3.1 Section 3.2
3.2-7	The main page of the Home Site shall provide access to the Login Page	Section 3.2
3.2-8	The main page of the Home Site shall provide access to the Integrated Search interface	Section 3.2 Section 4.1.5 Section 4.1.6
3.2-9	The main page of the Home Site shall provide info and links on downloading the best browsers for viewing the site	Section 3.1 Section 3.2
3.2-10	The main page of the Home Site shall provide access to the Feedback page	Section 3.2 Section 4.1.1
3.2-11	The main page of the Home Site shall provide access to the Privacy Statement page	Section 3.2 Section 4.1.1
	3.2.1 Calendar of Events Area	
3.2.1-1	The main page of the Home Site shall contain an area that displays an SFA Master Calendar of Events	Section 4.1.3
3.2.1-2	The Calendar of Events shall display one month of events at a time	Section 4.1.3
3.2.1-3	The Calendar of Events shall allow users to navigate through the calendar in one month increments	Section 4.1.3
3.2.1-4	The Calendar of Events shall allow users to display the current month of events	Section 4.1.3
3.2.1-5	The Calendar of Events shall allow users to navigate directly to a given month	Section 4.1.3
3.2.1-6	The Calendar shall provide SFA the ability to hyperlink from the Calendar to related documents or other sections of the Portal or other sites	Section 4.1.3
3.2.1-7	The Calendar of Events shall list events grouped into categories	Section 4.1.3
3.2.1-8	The Calendar of Events area shall be composed of a scrolling text area containing the events in chronological order	Section 4.1.3
3.2.1-9	The Calendar of Events shall provide SFA staff the ability to assign a time span to a calendar event	Section 4.1.3
3.2.1-10	The Calendar of Events shall provide SFA staff the ability to make the display of a calendar event mandatory for all users	Section 4.1.3
3.2.1-11	The Personal Site shall provide a Calendar of Events that can be filtered by the user to only show calendar events that are of categories of their choosing with the exception of calendar events that have been marked as mandatory	Section 4.2.3
	3.2.2 Headlines Area	

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Rqmt #	Requirement	Fulfilled By
3.2.2-1	The main page of the Home Site shall contain an area that displays a set of Headlines or News Briefs	Section 4.1.4
3.2.2-2	The Headlines area shall include overall ED news, as well as sections specifically related to the Schools Channel, the Students Channel and the Financial Partners channel	Section 4.1.4
3.2.2-3	The Headlines area shall provide SFA staff the capability to assign a category to a news event	Section 4.1.4
3.2.2-4	The Headlines area shall be displayed as a categorized bullet list of information.	Section 4.1.4
3.2.2-5	The Headlines area shall provide SFA staff the ability to assign a time span to a news event	Section 4.1.4
3.2.2-6	The Headlines area shall provide SFA staff the ability to make the display of a news event mandatory for all users	Section 4.1.4
3.2.2-7	The Personal Site shall provide users with a Headlines area that can be filtered by the user to only show news events that are of categories of their choosing, with the exception of events that have been marked as mandatory	Section 4.2.4
	3.2.3 Links Area	
3.2.3-1	The main page of the Home Site shall provide an organized list of links to all of the SFA web sites	Section 4.1.2
3.2.3-2	The list of links shall contain a category titled "Exchange Data" which contains the following links: <ul style="list-style-type: none"> • A link to the LO(Direct Loans Batch Files) SFA site • A link to the NSLDS site • A link to the Pell site • A link to the QAP site 	Section 4.1.2
3.2.3-3	The list of links shall contain a category titled "Check Student Records" which contains the following links: <ul style="list-style-type: none"> • A link to the LO(Origination Record and PLUS Credit Check) SFA site • A link to the Pell Grants SFA site • A link to the NSLDS site • A link to the DLSS site • A link to the FAFSA site • A link to the Loan Consolidation site 	Section 4.1.2
3.2.3-4	The list of links shall contain a category titled "Book Store" which contains the following links: <ul style="list-style-type: none"> • A link to the Order Bulk Publications For Students SFA site • A link to the Order Technical Publications SFA site • A link to the SFA Download SFA site • A link to the PEPS site 	Section 4.1.2
3.2.3-5	The list of links shall contain a category titled "Training/Conferences" which contains the following links: <ul style="list-style-type: none"> • A link to the Direct Loan Conferences SFA site • A link to the Quality Assurance Conferences SFA site • A link to the Electronic Access Conferences SFA site • A link to the SFA Coach SFA site • A link to the SFA University site • A link to the NASFAA training site (need URL) 	Section 4.1.2

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Rqmt #	Requirement	Fulfilled By
	<ul style="list-style-type: none"> A link to the NACUBO training site (need URL) 	
3.2.3-6	<p>The list of links shall contain a category titled "Online Library" which contains the following links:</p> <ul style="list-style-type: none"> A link to the SFA Handbooks SFA site A link to the CFRs SFA site A link to the DPL SFA site A link to the QAP SFA site A link to the SFA Tech Support SFA site 	Section 4.1.2
3.2.3-7	<p>The list of links shall contain a category titled "Contact Us" which contains the following links:</p> <ul style="list-style-type: none"> A link to the SFA Ombudsman SFA site A list of Current Phone #'s & E-Mails IIS, CAMS, IFAP Contact List, CASE Teams 	Section 4.1.2
3.2.3-8	<p>The list of links shall contain a category titled "Program Participation and Funding" which contains the following links:</p> <ul style="list-style-type: none"> A link to the E-App SFA site A link to the FISAP SFA site A link to the GAPS SFA site A link to the PEPS Institutional File SFA site 	Section 4.1.2
	3.3 Login Page	
3.3-1	The SFA Portal shall provide a Login Page	Section 4.2.1
3.3-2	The Login Page shall be an Open Site	Section 4.2.1
3.3-3	The Login Page shall be directly accessible	Section 3.1 Section 4.2.1
3.3-4	The Login Page shall require the user to enter their SFA Portal login name	Section 4.2.1
3.3-5	The Login Page shall require the user to enter their SFA Portal password	Section 4.2.1
3.3-6	The Login Page shall provide access to the Personal Site associated with the login name and password	Section 4.2.1
3.3-7	The Login Page shall inform the user if the login name and password do not match and of the method needed to contact the system Help Desk	Section 4.2.1
3.3-8	The Login Page shall provide a mechanism to allow users to create their own SFA Portal Account by which they are able to gain access to their Personal Site	Section 4.2.1
	3.4 Personal Site	
3.4-1	The SFA Portal shall provide a Personal Site	Section 3.1
3.4-2	The Personal Site shall only be accessible once the user has been authenticated through the Login Page	Section 3.1 Section 4.2
3.4-3	The Personal Site shall provide a mechanism for the user to change their SFA Portal password	Section 4.2.12

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Rqmt #	Requirement	Fulfilled By
3.4-4	All Personal Site pages shall provide access to the Feedback page	Section 4.2.2
3.4-5	All Personal Site pages shall provide access to the Integrated Search interface	Section 4.2.11
3.4-6	The main page of the Personal Site shall display the user's customized list of personal bookmarks	Section 4.2.9
3.4-7	The main page of the Personal Site shall display the user's customized list of SFA sites	Section 4.2.5
3.4-8	The main page of the Personal Site shall display a Calendar of Events that can be filtered by category	Section 4.2.3
3.4-9	The main page of the Personal Site shall display a Headlines section that can be filtered by category	Section 4.2.4
3.4-10	The Personal Site shall provide a mechanism for users to filter events displayed in their Calendar section by category	Section 4.2.7
3.4-11	The Personal Site shall provide a mechanism for users to filter news events displayed in their Headlines section by category	Section 4.2.8
3.4-12	The Personal Site shall provide information on how to customize the SFA Site list	Section 4.2.2
3.4-13	The Personal Site shall provide information on how to customize the list of Personal Bookmarks	Section 4.2.2
3.4-14	The Personal Site shall provide information on how to apply filters to the Calendar	Section 4.2.2
3.4-15	The Personal Site shall provide information on how to apply filters to the Headlines	Section 4.2.2
3.4-16	The Personal Site shall provide information on how to change your SFA Portal password	Section 4.2.2
	3.5 Feedback Page	
3.5-1	The SFA Portal shall provide a Feedback Page	Section 4.1.1 Section 4.2.2
3.5-2	The Feedback page shall provide a mechanism for the users to send feedback regarding the SFA Portal to the Portal administrators	Section 4.1.1 Section 4.2.2
3.5-3	The Feedback page shall provide a mechanism for the users to send feedback containing general SFA inquiries to an SFA representative	Section 4.1.1 Section 4.2.2
	3.6 Privacy Statement Page	
3.6-1	The SFA Portal shall provide a Privacy Statement Page	Section 4.1.1 Section 4.2.2
3.6-2	The Privacy Statement Page shall display the current version of the Privacy Statement	Section 4.1.1 Section 4.2.2
	4.0 Technical Requirements	
	4.1 Integrated Search	
4.1-1	The SFA Portal shall provide an integrated search interface	Section 4.1.5 Section 4.1.6

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Rqmt #	Requirement	Fulfilled By
		Section 4.2.11
	4.1.1 Search Submission	
4.1.1-1	The Integrated Search interface shall allow the user to submit searches against all available targets indexed/spidered by the search engine	Section 4.1.5 Section 4.1.6 Section 4.2.11
4.1.1-2	The Integrated Search interface shall support natural language queries	Section 4.1.5 Section 4.1.6 Section 4.2.11
4.1.1-3	The Integrated Search interface shall support boolean keyword queries	Section 4.1.5 Section 4.1.6 Section 4.2.11
4.1.1-4	The Integrated Search interface shall provide a link to a Search Help page, which will include <ul style="list-style-type: none"> An explanation of the construction of natural language queries An explanation of the construction of boolean keyword queries 	Section 4.1.1 Section 4.2.2
	4.1.2 Delivery of Search Results	
4.1.2-1	The SFA Portal shall provide a mechanism for the user to view a list containing the results of their searches	Section 4.1.5 Section 4.1.6 Section 4.2.11
4.1.2-2	The SFA Portal shall provide a mechanism for the user to retrieve the target of a link in their list of search results	Section 4.1.5 Section 4.1.6 Section 4.2.11
	4.1.3 Configuration of Search Indexing/Spidering	
4.1.3-1	The search engine shall be configurable to use a distributed/parallel search wherever a SFA web site provides an Autonomy index	Natively by Autonomy
4.1.3-2	The search engine shall be configurable to index/spider all non-access-controlled URL-accessible content of SFA sites that do not provide an Autonomy index	Natively by Autonomy
	4.2 Customization	
4.2-1	The SFA Portal shall allow the user to customize the content of the main page of their Personal Site	Section 4.2.6 Section 4.2.7 Section 4.2.8 Section 4.2.10

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Rqmt #	Requirement	Fulfilled By
	4.2.1 Personal Bookmarks	
4.2.1-1	The Personal Site shall provide a mechanism for the user to add a URL to their list of personal bookmarks	Section 4.2.10
4.2.1-2	The Personal Site shall provide a mechanism for users to remove a personal bookmark from their list	Section 4.2.10
	4.2.2 Customizable SFA Site List	
4.2.2-1	The Personal Site shall provide a mechanism for the user to choose zero or more of the SFA web sites to display on their customized page	Section 4.2.6
	4.3 Navigation	
4.3-1	All sites external to the SFA Portal accessed through links in the Portal shall be displayed in a new window	Section 4.1.2 Section 4.2.13.1
4.3-2	All sites internal to the SFA Portal accessed through links in the Portal shall be displayed in the current window	Section 3.1
	4.4 Single Logon	
4.4-1	Single logon is not a requirement for Version 1.0, however, the developers will investigate the items needed to implement Single Logon	Section 4.2.13
	4.5 Administration	
4.5-1	The SFA Portal shall provide an interface allowing authorized users to define the content of the Headlines area	Section 4.3.3
4.5-2	The SFA Portal shall provide an interface allowing authorized users to define the content of the Calendar of Events area	Section 4.3.2
4.5-3	The SFA Portal shall provide an API which allows Calendar of Events information to be placed directly into the Calendar of Events database by an authorized user or system	Section 4.3.2
4.5-4	The SFA Portal shall provide an API which Headlines information to be placed directly into the Headlines database by an authorized user or system	Section 4.3.3